

Serial No. 10/584,891

Docket No. K-0821

Amendment dated **December 15, 2010**Reply to Office Action of **September 15, 2010****AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A device ~~for supplying~~that supplies mixed gas to radiant heating type gas burners ~~of radiant heating type~~ having a housing, a plurality of burner assemblies in the housing for combustion of the mixed gas therein, each ~~with~~of the plurality of burner assemblies having a burner chamber ~~for supplying mixed gas~~that receives a mixture of fuel gas and air ~~thereto~~therein, and a glass plate placed on top of the housing, comprising:

a plurality of mixing tubes respectively in communication with the plurality of burner chambers for supplying the fuel gas and the air thereto;

a plurality of gas nozzles for respectively spraying the fuel gas into the plurality of mixing tubes;

a plurality of air supply tubes ~~each spaced a distance away from the other end of one of the mixing tubes, for supplying~~for respectively directing air toward the ~~one~~plurality of the mixing tubes, wherein a first end of each of the plurality of mixing tubes is coupled to a corresponding burner chamber and a first end of each of the plurality of air supply tubes is axially aligned with a second end of a corresponding mixing tube, with a predetermined gap formed therebetween;

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a plurality of air passages defined by the predetermined gaps formed between the air supply tubes and the mixing tubes, wherein outside air is drawn through the plurality of air passages and into the plurality of mixing tubes by a pressure difference between the outside and inside of the mixing tubes; and

a at least one fan unit connected to an in communication with a second end of at least one of the plurality of air supply tubes for supplying air thereto.

2. (Currently Amended) The device as claimed in claim 1, wherein the predetermined gap formed between the first end of each air supply tube has one end spaced from the other and the second end of the respective mixing tube in formed in a radial direction.

3. (Currently Amended) The device as claimed in claim 1, wherein the predetermined gap formed between the first end of each air supply tube has one end spaced from the other and the second end of the respective mixing tube is formed in a length longitudinal direction.

4. (Currently Amended) The device as claimed in claim 1, wherein the at least one fan unit is on provided at an outside of the housing.

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5. (Currently Amended) The device as claimed in claim 1, further comprising at least one air supply chamber ~~formed between the plurality of air supply tubes and the at least one fan unit for receiving so as to provide air from the at least one fan unit and supplying the air to the plurality of air supply tubes.~~

6. (Cancelled)

7. (Currently Amended) The device as claimed in claim 1, further comprising at least one branch tube having ~~one a first end connected to the at least one fan unit, and the other a second end connected to a in communication with the plurality of the air supply tubes for distributing so as to distribute~~ air from the at least one fan unit to the plurality of air supply tubes.

8. (Currently Amended) The device as claimed in claim 1, further comprising a ~~plurality of connecting member for connecting the members that each connect a mixing tube of the plurality of mixing tubes to the a corresponding air supply tube together.~~

9. (Currently Amended) The device as claimed in claim 8, wherein ~~each of the plurality of connecting member members includes a nozzle holding member formed as a unit for holding the that holds a corresponding gas nozzle of the plurality of gas nozzles.~~

10. (Currently Amended) The device as claimed in claim 8, wherein ~~the connecting member is fixed to opposite sides of the further comprising a fastening device that fastens each connecting member to a respective~~ mixing tube and the air supply tube with fastening means.

11. (Currently Amended) The device as claimed in claim 8, wherein ~~the each~~ mixing tube, ~~the corresponding~~ air supply tube, and ~~the corresponding~~ connecting member form a mixing tube assembly having two symmetric members bonded together.

12. (Currently Amended) The device as claimed in claim 11, wherein the mixing tube assembly ~~includes; comprises;~~

a first mixing tube assembly having a first mixing tube part forming a first half of the mixing tube, a first air supply tube part forming a first half of the air supply tube, and a plate ~~form of second shaped first~~ connection member extended ~~that extends~~ outward from ~~both two~~ opposite sides of the first mixing tube part and the first air supply part as ~~one a single unit so as~~ to connect the first mixing tube part and the first air supply part as ~~one a single unit;~~ and

a second mixing tube assembly having a second mixing tube part forming a second half of the mixing tube, a second air supply tube part forming a second half of the air supply tube, and a plate ~~form of shaped~~ second connection member extended ~~that extends~~ outward from ~~both two opposite~~ sides of the second mixing tube part and the second air supply part as ~~one a single unit so as~~ to connect the second mixing tube part and the second air supply part as ~~one a~~

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single unit, and wherein the second connection member is bonded with the first connection

member.

13. (Currently Amended) The device as claimed in claim 8, wherein ~~the each~~ mixing tube, ~~the corresponding~~ air supply tube, and ~~the corresponding~~ connecting member are injection molded as ~~one a~~ a single unit.

14. (Currently Amended) The device as claimed in claim 1, wherein ~~the a sectional area of the first end of each air supply tube has the other end, facing the other second end of the respective mixing tube, with a sectional area equal to, or is greater than or equal to a sectional area of the other second end of the respective mixing tube.~~

15. (Currently Amended) The device as claimed in claim 1, wherein a diameter of the first end of each air supply tube has the other end facing the other second end of the respective mixing tube with a diameter becoming is greater than a diameter of other part portions of the air supply tube so as to have an expanded tube form.

16. (Currently Amended) The device as claimed in claim 1, wherein the at least one fan unit includes, a fan, and a variable speed motor for varying that varies a rotation speed of the

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~~at least one fan according to based on a gas spray rate through the one or more of the plurality of gas nozzle nozzles.~~

17. (Currently Amended) The device as claimed in claim 1, wherein each ~~one of the~~ plurality of mixing tubes is connected to a plurality of air supply tubes for supplying air thereto.

18. (Currently Amended) A device ~~for supplying that supplies~~ mixed gas to ~~radiant heating type gas burners of radiant heating type~~ having a housing, a plurality of burner assemblies ~~provided in the housing for combustion of the mixed gas therein, each with of the~~ plurality of burner assemblies having a burner chamber ~~for supplying mixed gas that receives a mixture of fuel gas and air thereto therein,~~ and a glass plate ~~placed on top of~~ positioned on the housing, comprising:

a plurality of mixing tubes respectively in communication with the plurality of burner chambers ~~for supplying the fuel gas and the air thereto;~~

a plurality of gas nozzles ~~for respectively spraying the fuel gas into the~~ in communication with the plurality of mixing tubes;

a plurality of air supply tubes each spaced a predetermined distance away apart from the ~~other and axially aligned with a corresponding end of one a respective mixing tube of the~~ plurality of mixing tubes, for supplying air toward the one of the mixing tubes;

a plurality of air passages defined by predetermined gaps formed between the air supply tubes and the mixing tubes, wherein outside air is drawn through the plurality of air passages and into the plurality of mixing tubes by a pressure difference between the outside and inside of the mixing tubes;

~~a at least one fan unit for supplying that supplies~~ air to the plurality of air supply tubes;  
and

at least one air supply chamber provided between the plurality of air supply tubes and the  
~~at least one fan unit for receiving so as to direct air from the fan unit and supplying the air to the~~  
plurality of air supply tubes.

19. (Original) The device as claimed in claim 18, wherein the air supply chamber is integrated inside of the housing.

20. (Original) The device as claimed in claim 18, wherein the air supply chamber has a plurality of air supply tubes of other burner assemblies connected thereto.

21. (Currently Amended) ~~A device for supplying that supplies mixed gas to radiant heating type gas burners of radiant heating type having a housing, a plurality of burner assemblies provided in the housing for combustion of the mixed gas therein, each with of the plurality of burner assemblies having a burner chamber for supplying mixed gas that receives a~~

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~~mixture~~ of fuel gas and air thereto~~therein~~, and a glass plate placed on top of ~~positioned on~~ the housing, comprising:

a plurality of mixing tubes respectively in communication with the ~~plurality of~~ burner chambers for supplying the fuel gas and the air thereto;

a plurality of gas nozzles for respectively ~~spraying them~~ in communication with the ~~plurality of mixing tubes so as to spray fuel gas into the mixing tubes therein~~;

a plurality of air supply tubes each having one end spaced a ~~predetermined~~ distance away apart from the other and axially aligned with a corresponding end of ~~one a respective mixing tube of the plurality of mixing tubes, for supplying air to the one of the mixing tubes~~;

a fan unit for supplying air in communication with the plurality of air supply tubes; and

at least one branch tube having ~~one a first~~ end connected to the fan unit, and the other ~~a second~~ end connected to ~~a the plurality of the air supply tubes for distributing so as to distribute~~ air from the fan unit to the plurality of air supply tubes.

22. (Currently Amended) A device for supplying that supplies mixed gas to gas burners of radiant heating type having a housing, a plurality of burner assemblies provided in the housing for combustion of the mixed gas therein, and each with having a burner chamber for supplying mixed gas that receives a mixture of fuel gas and air thereto~~therein~~, and a glass plate placed on top of ~~positioned~~ the housing, comprising:

a mixing tube assembly, including:



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a mixing tube having one end in communication with the burner chamber for supplying ~~so as to supply~~ fuel gas and air to the burner chamber;

an air supply tube ~~formed as one unit with the mixing tube on~~ positioned at an outside of the mixing tube such that ~~one an~~ end thereof is spaced a predetermined distance ~~away apart from the other a~~ corresponding end of the mixing tube ~~for supplying in a radial direction air to the mixing tube;~~;

an air passage formed between the corresponding ends of the air supply tube and the mixing tube, wherein a pressure difference between the outside and an interior of the mixing tube draws air into the mixing tube through the air passage; and

a connecting member ~~for connecting~~ that connects the mixing tube and the air supply tube ~~as one so as to form a single unit;~~

a gas nozzle ~~at a position~~ spaced a predetermined distance ~~away apart~~ from the mixing tube ~~for spraying so as to spray~~ gas toward the mixing tube; and

a fan unit ~~for blowing~~ that blows air ~~to into~~ the air supply tube.

23. (Original) The device as claimed in claim 22, wherein the connecting member includes a nozzle holding part for holding the gas nozzle.

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24. (Currently Amended) The device as claimed in claim 22, wherein ~~further comprising a fastening device that fixes the connecting member is fixed to opposite side parts of the mixing tube and the air supply tube with fastening means.~~

25. (Currently Amended) The device as claimed in claim 22, wherein the mixing tube assembly ~~includes~~ comprises:

a first mixing tube assembly having a first mixing tube part forming a first half of the mixing tube, a first air supply tube part forming a first half of the air supply tube, and a plate ~~form of second shaped first connection member extended that extends outward from both two opposite sides of the first mixing tube part and the first air supply part as one a single unit so as to connect the first mixing tube part and the first air supply part as one a single unit;~~ and

a second mixing tube assembly having a second mixing tube part forming a second half of the mixing tube, a second air supply tube part forming a second half of the air supply tube, and a plate ~~form of shaped second connection member extended that extends outward from both two opposite sides of the second mixing tube part and the second air supply part as one a single unit so as to connect the second mixing tube part and the second air supply part as one a single unit, and wherein the second connection member is bonded with the first connection member.~~

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26. (Currently Amended) The device as claimed in claim 22, wherein the mixing tube assembly is formed as ~~one~~ a single unit by injection molding.

27. (Currently Amended) The device as claimed in claim 22, wherein a sectional area of the one end of the air supply tube facing the other ~~corresponding end of the mixing tube has a sectional area is greater than or equal to, or greater than a sectional area of the other corresponding end of the mixing tube.~~

28. (Currently Amended) The device as claimed in claim ~~1~~22, wherein a diameter of the one end of the air supply tube facing the other ~~corresponding end of the mixing tube has a diameter becoming is greater than a diameter of other part to have portions thereof such that the air supply tube has an expanded tube form.~~